(2)

JAPANESE [JP,05-041687,A]

CLAIMS DETAILED DESCRIPTION TECHNICAL FIELD PRIOR ART EFFECT OF THE INVENTION TECHNICAL PROBLEM MEANS OPERATION EXAMPLE DESCRIPTION OF DRAWINGS DRAWINGS

[Translation done.]

* NOTICES *

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CLAIMS

[Claim(s)]
[Claim 1] When one and the mobile station of two or more base stations which install in the location of arbitration and perform the communication link with a network perform radio, In the base station selection method which chooses the base station of arbitration in a mobile station, the base station is peculiar to each base station, and the number showing the contents of service is sent out to a wireless circuit. A mobile station is a base station selection method characterized by choosing the base station which can communicate desired from the receiving situation of the electric wave from two or more base stations, and the number sent from a base station.

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DETAILED DESCRIPTION

[Detailed Description of the Invention]
[0001]
[Industrial Application] This invention relates to the base station selection method which chooses the base station which was suitable for the self communication link among two or more base stations in mobile stations, such as a land mobile radiotelephone.
[0002]
[Description of the Prior Art] In order to make two or more base stations scattered, among those to communicate by connecting with a suitable base station in the mobile radio communication link of a land mobile radiotelephone etc., a base station receivable [with a mobile station] has much ** existing [two or more]. In this case, the mobile station took into consideration the receiving level of the electric wave received from a base station, an error rate, etc., and has chosen the good base station of the receiving situation of an electric wave.
[0003] For example, from three games of base stations A, B, and C, supposing the mobile station was in the location which can receive an electric wave, it was communicating by choosing the station with the strongest electric wave of them.
[0004]
[Problem(s) to be Solved by the Invention] However, since the service which a base station offers is being diversified in recent years If only the strength of an electric wave is chosen as reliance when there are the class of service, for example, the difference of a communication mode, a difference of a tariff, and a difference of the contents of service for every base station by such conventional approach Since a communication link was impossible when the service which the selected base station needs is not applied, it had the technical problem that a desired base station could not be chosen by some selection result.
[0005] This invention was made in view of such a situation, and after taking into consideration a difference of the contents of service of a base station, it chooses the optimal base station.
[0006]
[Means for Solving the Problem] In order to solve such a technical problem, the base station is peculiar to each base station, this invention sends out the number showing the contents of service to a wireless circuit, and a mobile station chooses the base station which can communicate desired from the receiving situation of the electric wave from two or more base stations, and the number sent from a base station.
[0007]
[Function] The base station has sent out the number uniquely assigned for every base station of the through the wireless circuit. Since this number also expresses the types of services of a base station, the mobile station which received it judges and chooses the optimal base station from the electric-wave receiving situation of the number corresponding to the class of service to receive, and a base station.
[0008]
[Example] Drawing 1 is the system configuration Fig. showing one example of this invention, notations 1-4 are base stations, notations 5-7 show the area at which the electric wave transmitted from base stations 1-4 arrives, and a part of the attainment area overlaps mutually.

any of the electric wave to which a notation 9 is a mobile station and base stations 1-4 transmit the mobile station 9 — although — it shall move in the reaching area

[0009] A mobile station 9 shall have the strongest electric wave that the electric wave from which base station also reaches from a base station 1 as it is shown in Table 1, although it is ability ready for receiving, and the electric wave which reaches from there in order of base stations 2, 3, and 4 shall become weak. The strength of the electric wave expressed on receiving level is shown in Table 1.

[0010]

[Table 1]

基地局	1	2	3	4
受信レベル	A >	B	> C	> D

[0011] Although base stations 1-4 can communicate with every mobile station which exists in the attainment area, if the mobile station 9 has not made the base station and contract, the communication link of it has become impossible. Although the contract omits the mobile station 9 and the contract in the base station 1, base stations 2, 3, and 4 shall contract. Moreover, although base stations 1 and 3, fourth-sound voice communication service, and data transmission services are offered, the base station 2 shall offer only voice communication service. If the strength of the electric wave expressed with a contract situation, types of services, and receiving level is summarized, it will become as it is shown in Table 2.

[0012]

[Table 2]

基地局	1	2	3	4
移動局との契約	なし	あり	あり	あり
音声通信	提供	提供	提供	提供
データ通信	提供	非提供	提供	提供
受信レベル	A >	B	> C	> D

[0013] Since each base station expresses a contract condition and the contents of service, it has transmitted the signal which expressed it with the sign. for example, although the contract with a mobile station is performed as the numeric value of the beginning of a number is "2" or "3", it shall not contract coming out other than this Moreover, although voice communication and data transmission services are offered as the 2nd numeric value of a number is "8" or "9", only voice communication shall be offered if it is the other numeric value. The number assigned by each base station on such criteria shall have become as it is shown in Table 2.

[0014]

[Table 3]

基地局	1	2	3	4
受信レベル	18	25	28	39

[0015] When a mobile station 9 tends to perform data communication in as good communication link quality as possible in such a system, a base station is chosen as follows. Although the base stations where a mobile station 9 can receive an electric wave are base stations 1, 2, 3, and 4, they become weak [receiving level] in order of base stations 1, 2, 3, and 4, and receiving level is [the base station 4] weak most. Moreover, it turns out that there is no contract and, as for a base station 1, the number from each base station which the mobile station 9 received shows not offering data transmission services, even if a contract has a base station 2.

[0016] For this reason, although a base station 1 can communicate in the best communication link quality, since it has not contracted and a communication link is impossible, this is excepted. Next, a base station 2 can communicate in good communication link quality, and although this is contracting, since it does not offer data transmission services, it also excepts this. Next, since a base station 3 can communicate in good communication link quality, this is contracting and data transmission services are also offered, it can communicate. For this reason, when it judges so far, if a base station 3 is chosen, a mobile station 9 will judge that data communication required of the best communication link quality can be performed, and will choose a base station 3.
[0017] Although explained having belonged to the firm where each base stations differ, if the number as which the same firm is sufficient and the significance [number] was given in short by the contents of service of a base station is transmitted from the base station, with a mobile station, this can receive it and, as for the above, can choose a required base station.
[0018]
[Effect of the Invention] The number to which, as for this invention, a base station expresses the contents of service to offer that it explained above is transmitted, the mobile station which received it takes into consideration the contents of the service which self needs, and the strength of an electric wave, and in order to choose the base station which can communicate a request in the best communication link quality, it has the effectiveness that the base station optimal from the beginning which sets up a channel can be chosen.

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TECHNICAL FIELD

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PRIOR ART

[Description of the Prior Art] In order to make two or more base stations scattered, among those to communicate by connecting with a suitable base station in the mobile radio communication link of a land mobile radiotelephone etc., a base station receivable [with a mobile station] has much ** existing [two or more]. In this case, the mobile station took into consideration the receiving level of the electric wave received from a base station, an error rate, etc., and has chosen the good base station of the receiving situation of an electric wave.
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EFFECT OF THE INVENTION

[Effect of the Invention] The number to which, as for this invention, a base station expresses the contents of service to offer that it explained above is transmitted, the mobile station which received it takes into consideration the contents of the service which self needs, and the strength of an electric wave, and in order to choose the base station which can communicate a request in the best communication link quality, it has the effectiveness that the base station optimal from the beginning which sets up a channel can be chosen.

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TECHNICAL PROBLEM

[Problem(s) to be Solved by the Invention] However, since the service which a base station offers is being diversified in recent years If only the strength of an electric wave is chosen as reliance when there are the class of service, for example, the difference of a communication mode, a difference of a tariff, and a difference of the contents of service for every base station by such conventional approach Since a communication link was impossible when the service which the selected base station needs is not applied, it had the technical problem that a desired base station could not be chosen by some selection result.
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MEANS

[Means for Solving the Problem] In order to solve such a technical problem, the base station is peculiar to each base station, this invention sends out the number showing the contents of service to a wireless circuit, and a mobile station chooses the base station which can communicate desired from the receiving situation of the electric wave from two or more base stations, and the number sent from a base station.

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OPERATION

[Function] The base station has sent out the number uniquely assigned for every base station of the through the wireless circuit. Since this number also expresses the types of services of a base station, the mobile station which received it judges and chooses the optimal base station from the electric-wave receiving situation of the number corresponding to the class of service to receive, and a base station.

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EXAMPLE

[Example] Drawing 1 is the system configuration Fig. showing one example of this invention, notations 1-4 are base stations, notations 5-7 show the area at which the electric wave transmitted from base stations 1-4 arrives, and a part of the attainment area overlaps mutually. any of the electric wave to which a notation 9 is a mobile station and base stations 1-4 transmit the mobile station 9 — although — it shall move in the reaching area
[0009] A mobile station 9 shall have the strongest electric wave that the electric wave from which base station also reaches from a base station 1 as it is shown in Table 1, although it is ability ready for receiving, and the electric wave which reaches from there in order of base stations 2, 3, and 4 shall become weak. The strength of the electric wave expressed on receiving level is shown in Table 1.
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[Table 1]

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DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]
[Drawing 1] Drawing showing the structure of a system which applied this invention
[Description of Notations]
1 Base Station
2 Base Station
3 Base Station
4 Base Station
5 Service Area
6 Service Area
7 Service Area
8 Service Area
9 Mobile Station

[Translation done.]

引用文献２

(19)日本国特許庁（ＪＰ）　(12)公開特許公報（Ａ）　(11)特許出願公開番号
特開平5－41687
(43)公開日　平成５年(1993)２月19日

(51)Int.Cl.[5]	識別記号	庁内整理番号	ＦＩ	技術表示箇所
Ｈ０４Ｂ　7/26	１０６　Ａ	7304－5K		

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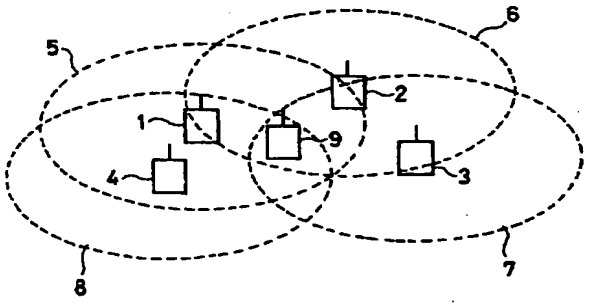
最終頁に続く

(54)【発明の名称】　基地局選択方式

(57)【要約】
【目的】　基地局のサービス内容の相違を勘案したうえで、最適な基地局を選択することを目的とする。
【構成】　基地局１～４がその基地局毎に独自に割り当てられた番号を無線回線を介して送出している。この番号は基地局１～４のサービス種別も表すようになっているので、それを受信した移動局９は受けたいサービスの種類に対応した番号と基地局の電波受信状況から、最適な基地局を判定し選択する。



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【特許請求の範囲】

【請求項１】　任意の場所に設置し網との通信を行う複数の基地局の一つと移動局が無線通信を行うとき、移動局において任意の基地局を選択する基地局選択方式において、

基地局はそれぞれの基地局に固有でありサービスの内容を表す番号を無線回線に送出し、

移動局は複数の基地局からの電波の受信状況と基地局から送られてくる番号とから所望の通信が可能な基地局を選択することを特徴とする基地局選択方式。

【発明の詳細な説明】

【０００１】

【産業上の利用分野】本発明は、自動車電話等の移動局において複数の基地局のうち自己の通信に適した基地局を選択する基地局選択方式に関するものである。

【０００２】

【従来の技術】自動車電話等の移動無線通信では、複数の基地局を散在させ、そのうち適当な基地局と接続して通信を行うため、移動局で受信可能な基地局は複数存在する異が多い。この場合、移動局は基地局から受信する電波の受信レベルや、誤り率等を勘案して、電波の受信状況の良い基地局を選択している。

【０００３】例えば基地局Ａ，Ｂ，Ｃの３局から電波を受信できる位置に移動局があるとすると、その内の最も電波の強い局を選択して通信を行っていた。

【０００４】

【発明が解決しようとする課題】しかしながら近年は基地局の行うサービスが多様化してきているので、このような従来の方法では基地局毎にサービスの種類、例えば通信方式の相違、料金の相違、サービス内容の相違がある時に電波の強さだけを頼りに選択すると、選択された基地局が必要とするサービスを適用していない場合は通信ができないために、選択結果によっては所望の基地局＊

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＊を選択することができないという課題を有していた。

【０００５】本発明はこのような状況に鑑みてなされたもので、基地局のサービス内容の相違を勘案したうえで最適な基地局を選択するようにしたものである。

【０００６】

【課題を解決するための手段】このような課題を解決するために本発明は、基地局はそれぞれの基地局に固有でありサービスの内容を表す番号を無線回線に送出し、移動局は複数の基地局からの電波の受信状況と基地局から送られてくる番号とから所望の通信が可能な基地局を選択するようにしたものである。

【０００７】

【作用】基地局がその基地局毎に独自に割り当てられた番号を無線回線を介して送出している。この番号は基地局のサービス種別も表すようになっているので、それを受信した移動局は受けたいサービスの種類に対応した番号と基地局の電波受信状況から、最適な基地局を判定し選択する。

【０００８】

【実施例】図１は本発明の一実施例を示すシステム構成図であり、記号１から４は基地局であり、記号５から７は基地局１から４より送信する電波が到達するエリアを示しており、その到達エリアの一部は相互に重複するようになっている。記号９は移動局であり、その移動局９は基地局１から４の送信する電波の何れもが到達するエリアを移動しているものとする。

【０００９】移動局９はどの基地局からの電波も受信可能であるが、表１に示すように基地局１から到達する電波が最も強く、基地局２、３、４の順にそこから到達する電波が弱くなるものとする。受信レベルで表現した電波の強さを表１に示す。

【００１０】

【表１】

基地局	1	2	3	4
受信レベル	A ＞	B ＞	C ＞	D

【００１１】基地局１～４はその到達エリア内に存在するどの移動局とも通信が可能であるが、移動局９はその基地局と契約を結んでいなければ通信ができないようになっているものとする。その契約は、基地局１は移動局９と契約を行っていないが、基地局２、３、４は契約を行っているものとする。また基地局１、３、４音声通信サービスとデータ通信サービスを提供しているが、基地局２は音声通信サービスのみを提供しているものとする。契約状況、サービス種別、受信レベルで表した電波の強さをまとめると表２のようになる。

【００１２】

【表２】

3　　4

基地局	1	2	3	4
移動局との契約	なし	あり	あり	あり
音声通信	提供	提供	提供	提供
データ通信	提供	非提供	提供	提供
受信レベル	A ＞	B ＞	C ＞	D

【００１３】各基地局は契約状態およびサービス内容を表すため、それを符号で表した信号を送信している。例えば番号の最初の数値が「２」あるいは「３」であると移動局との契約を行っているがそれ以外であると契約を行っていないものとする。また、番号の２番目の数値が「８」あるいは「９」であると音声通信およびデータ通信サービスを提供しているが、それ以外の数値であれば音声通信のみを提供しているものとする。このような基準で各基地局に割り振られた番号は例えば表２のようになっているものとする。

【００１４】

【表３】

基地局	1	2	3	4
受信レベル	18	25	28	39

【００１５】このようなシステムにおいて移動局９がなるべく良い通信品質でデータ通信を行おうとする場合、次のようにして基地局を選択する。移動局９が電波を受信可能な基地局は基地局１、２、３、４であるが、受信レベルは基地局１、２、３、４の順に弱くなり、基地局４が最も受信レベルが弱くなっている。また、移動局９が受信した各基地局からの番号から、基地局１は契約がないことが分かり、基地局２は契約はあってもデータ通信サービスを提供していないことが分かる。

【００１６】このため、最も良い通信品質で通信できるのは基地局１であるがこれは契約をしていないので通信ができないので除外する。次に良い通信品質で通信できるのは基地局２であり、これは契約をしているがデータ通信サービスを提供していないのでこれも除外する。次に良い通信品質で通信できるのは基地局３であり、これは契約をしており、データ通信サービスも提供しているので、通信が可能である。このため移動局９はここまで判断した時点で、基地局３を選択すれば最も良い通信品質で必要なデータ通信を行うことができると判断し、基地局３を選択する。

【００１７】以上は各基地局が異なる会社に所属しているとして説明したが、これは同一の会社でも良く、要は基地局のサービス内容によって意味づけられた番号が基地局から送信されていれば、移動局ではそれを受信して、必要な基地局を選択することができる。

【００１８】

【発明の効果】以上説明したように本発明は基地局がその提供するサービス内容を表す番号を送信し、それを受信した移動局が自己が必要とするサービスの内容と、電波の強さを勘案して、最も良い通信品質で所望の通信を行える基地局を選択するようにしたものであるため、通信路を設定する当初から最適の基地局を選択することができるという効果を有する。

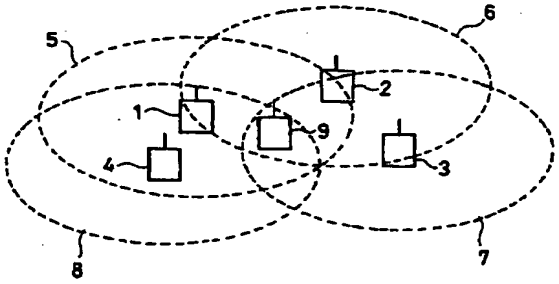
【図面の簡単な説明】

【図１】本発明を適用したシステムの構成を示す図

【符号の説明】

1　基地局
2　基地局
3　基地局
4　基地局
5　サービスエリア
6　サービスエリア
7　サービスエリア
8　サービスエリア
9　移動局

【図１】



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